

# Yuchen Zhao

Research Associate in Computer Science

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## Education

- 2013–2017 **Ph.D., Computer Science**, *University of St Andrews*, St Andrews, UK.  
2011–2013 **M.Sc., Information Security**, *Wuhan University*, Wuhan, China.  
2007–2011 **B.Eng., Information Security**, *Huazhong University of Science and Technology*, Wuhan, China.

## Appointments

- 10/2019– **Research Associate**, *Dyson School of Design Engineering*, Imperial College London, London, UK.  
07/2018– **Research Fellow**, *School of Electronics and Computer Science*, University of Southampton, Southampton, UK.  
10/2019  
07/2017– **Research Fellow**, *Cyber Security Centre*, De Montfort University, Leicester, UK.  
06/2018

## Publications

- [1] Y. Zhao, P. Barnaghi, and H. Haddadi. Multimodal Federated Learning on IoT Data. In *Proceedings of the 7th ACM/IEEE Conference on Internet of Things Design and Implementation*, IoTDI '22, Milan, Italy, May 2022. Online at <https://arxiv.org/abs/2109.04833>.
- [2] Y. Zhao, S. S. Afzal, W. Akbar, O. Rodriguez, F. Mo, D. Boyle, F. Adib, and H. Haddadi. Towards Battery-Free Machine Learning and Inference in Underwater Environments. In *Proceedings of the 23rd International Workshop on Mobile Computing Systems and Applications*, HotMobile '22, Tempe, Arizona, Mar. 2022. Online at <https://arxiv.org/abs/2202.08174>.
- [3] Y. Zhao, H. Liu, H. Li, P. Barnaghi, and H. Haddadi. (Preprint) Semi-supervised Federated Learning for Activity Recognition, 2021. arXiv:2011.00851, Online at <https://arxiv.org/abs/2011.00851>.
- [4] F. Palermo, H. Li, A. Capstick, N. Fletcher-Lloyd, Y. Zhao, S. Kouchaki, R. Nilforooshan, D. Sharp, and P. Barnaghi. (POSTER) Designing A Clinically Applicable Deep Recurrent Model to Identify Neuropsychiatric Symptoms in People Living with Dementia Using In-Home Monitoring Data. In *NeurIPS '21 Workshop - Bridging the Gap: From Machine Learning Research to Clinical Practice*, 2021. arXiv:2110.09868, Online at <https://arxiv.org/abs/2110.09868>.
- [5] Y. Zhao, H. Haddadi, S. Skillman, S. Enshaeifar, and P. Barnaghi. Privacy-Preserving Activity and Health Monitoring on Databox. In *Proceedings of the Third ACM International Workshop on Edge Systems, Analytics and Networking*, EdgeSys '20, pages 49–54, Heraklion, Greece, Apr. 2020. <https://doi.org/10.1145/3378679.3394529>.
- [6] Y. Zhao and I. Wagner. Using Metrics Suites to Improve the Measurement of Privacy in Graphs. *IEEE Transactions on Dependable and Secure Computing (TDSC)*, 19(1):259–274, Jan. 2022. (first published on 13 Mar 2020), <https://doi.org/10.1109/TDSC.2020.2980271>.
- [7] T. Blount, L. Koesten, Y. Zhao, and E. Simperl. Understanding the Use of Narrative Patterns by Novice Data Storytellers. In *Proceedings of the 4th International Conference on Computer-Human Interaction Research and Applications*, pages 128–138, 2020. <https://doi.org/10.5220/0010121601280138>.
- [8] Y. Zhao, T. Blount, L. Koesten, and E. Simperl. Structured and Uncertainty-Aware Data Storytelling. In *CHI '19 Workshop on HCI for Accurate, Impartial and Transparent Journalism: Challenges and Solutions*, Glasgow, UK, May 2019. Online at <https://bit.ly/3bSkuVh>.

- [9] Y. Zhao and I. Wagner. On the Strength of Privacy Metrics for Vehicular Communication. *IEEE Transactions on Mobile Computing (TMC)*, 18(2):390–403, Feb. 2019. (first published on 03 May 2018), <https://doi.org/10.1109/TMC.2018.2830359>.
- [10] Y. Zhao and I. Wagner. POSTER: Evaluating Privacy Metrics for Graph Anonymization and De-Anonymization. In *Proceedings of the 2018 on Asia Conference on Computer and Communications Security, ASIACCS '18*, pages 817–819, Incheon, Republic of Korea, 2018. <https://doi.org/10.1145/3196494.3201586>.
- [11] Y. Zhao. *Recommending Privacy Preferences in Location-sharing Services*. PhD thesis, University of St Andrews, June 2017.
- [12] Y. Zhao, J. Ye, and T. Henderson. A Robust Reputation-Based Location-Privacy Recommender System Using Opportunistic Networks. In *Proceedings of the 8th EAI International Conference on Mobile Computing, Applications and Services, MobiCASE'16*, pages 62–73, Cambridge, Great Britain, 2016. <https://doi.org/10.4108/eai.30-11-2016.2267031>.
- [13] Y. Zhao, J. Ye, and T. Henderson. The Effect of Privacy Concerns on Privacy Recommenders. In *Proceedings of the 21st International Conference on Intelligent User Interfaces, IUI '16*, pages 218–227, Sonoma, California, USA, Mar. 2016. <https://doi.org/10.1145/2856767.2856771>.
- [14] Y. Zhao. Usable Privacy in Location-Sharing Services. In *Companion Publication of the 21st International Conference on Intelligent User Interfaces, IUI '16 Companion*, pages 110–113, Sonoma, California, USA, Mar. 2016. <https://doi.org/10.1145/2876456.2876458>.
- [15] Y. Zhao, J. Ye, and T. Henderson. Privacy-Aware Location Privacy Preference Recommendations. In *Proceedings of the 11th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services, MOBIQUITOUS '14*, pages 120–129, London, United Kingdom, Dec. 2014. <https://doi.org/10.4108/icst.mobiubiquitous.2014.258017>.
- [16] Y. Zhao, J. Ye, and T. Henderson. (POSTER) Recommending Location Privacy Preferences in Ubiquitous Computing. In *Proceedings of the 7th ACM Conference on Security and Privacy in Wireless and Mobile Networks, WiSec '14*, Oxford, United Kingdom, July 2014. Online at <http://hdl.handle.net/10023/5075>.

## Service

### Technical programme committees

- 2022 **Program committee, The 2nd IEEE/IFIP International Workshop on Internet of Things Management (Manage-IoT '22, co-located with IEEE/IFIP NOMS '22)**, April, 2022, Budapest, Hungary.
- 2021 **Program committee, The 1st Workshop on Security and Privacy for Mobile AI (MAISP '21, co-located with ACM MobiSys '21)**, 24 June, 2021, Online, Worldwide.
- 2020 **Program committee, The 14th ACM Conference on Recommender Systems (RecSys '20)**, 22-26 September, 2020, Online, Worldwide.
- 2019 **Program committee, Demo & LBR of the 27th ACM Conference on User Modelling, Adaption and Personalization (UMAP '19)**, 9-12 June, 2019, Larnaca, Cyprus.  
**Program committee, The 27th ACM Conference on User Modelling, Adaption and Personalization (UMAP '19)**, 9-12 June, 2019, Larnaca, Cyprus.
- 2018 **Poster committee, The 16th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys '18)**, 10-15 June, 2018, Munich, Germany.

### Organising Committee

- 2020 **Local arrangements co-chairs, The 26th Annual International Conference on Mobile Computing and Networks (MobiCom '20)**, 21-25 September, 2020, London, United Kingdom.

### Reviewer

- 2022 **ACM Transactions on Privacy and Security.**  
**ACM Transactions on Computing for Healthcare.**
- 2021 **IEEE Transactions on Information Forensics and Security.**

- IEEE Transactions on Big Data.
- 2020 IEEE Transactions on Big Data.
- Computers & Security.
- 2018 Computer Communications.
- Journal of Information Security and Applications.
- 2016 The 13th International Conference on Wirtschaftsinformatik, February 12-15, 2017, St. Gallen, Switzerland.
- Policy & Internet.
- 2015 The 12th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC '15), August 10-14, 2015, Beijing, China.
- The 7th EAI International Conference on Mobile Computing, Applications and Services (Mo-biCASE '15), November 12-13, 2015, Berlin, Germany.
- Student Volunteer
- 2016 The 8th EAI International Conference on Mobile Computing, Applications and Services (Mo-biCASE '16), Cambridge, UK.
- The 21st International Conference on Intelligent User Interface (IUI '16), Sonoma, CA, USA.

## Talks

- 2021 "Federated Learning in the Wild", Brave Research Reading Session, Online.
- "Smart Healthcare using IoT Data and Machine Learning", Sensing and the Internet of Things, Online.
- "IoT Technology based Solutions to Challenges in Healthcare", ULTRATOOL-IoT Student Project, Online.
- 2020 "IoT Technology based Solutions to Challenges in Healthcare", Sensing and the Internet of Things, Online.
- "Privacy-preserving Activity and Health Monitoring on Databox", The Third ACM International Workshop on Edge Systems, Analytics and Networking, Online.
- 2018 "Human Data Interaction", WAIS Seminar, Southampton.
- 2017 "A Robust Reputation-based Location-privacy Recommender System using Opportunistic Networks", The Scottish Networking Event (SCONE), Glasgow.
- 2016 "A Robust Reputation-based Location-privacy Recommender System using Opportunistic Networks", The 8th EAI International Conference on Mobile Computing, Applications and Services, Cambridge.
- "Usable Privacy in Location-Sharing Services", The Student Consortium of the 21st International Conference on Intelligent User Interfaces, Sonoma.
- "The Effect of Privacy Concerns on Privacy Recommenders", The 21st International Conference on Intelligent User Interfaces, Sonoma.
- 2014 "Privacy-aware Location-privacy Preference Recommendations", The 11th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services, London.
- "Privacy-aware Location-privacy Preference Recommendations", The Scottish Networking Event (SCONE), Edinburgh.

## Funding

- 2013–2017 600<sup>th</sup> Anniversary Scholarship (award rate = 7/80), University of St Andrews.
- 2016 IUI 2016 Student Travel Grant.

## Student Supervision

- 2021– ICL Ph.D (as assistant supervisor), Mengjia Niu.

- 2021–  
ICL **Ph.D (as assistant supervisor)**, Yushan Huang.
- 2020–2021  
ICL **Undergraduate Research Opportunity Programme**, Leonardo Bossi.
- 2019–2020  
ICL **Undergraduate Research Opportunity Programme**, Hanyang Liu and Danni Shi.

## Teaching

- 2021–2022  
ICL **Guest lecturer**, Sensing and Internet of Things.
- 2020–2021  
ICL **Guest lecturer**, Sensing and Internet of Things.
- Tutor**, Design Engineering Futures.
- 2018–2019  
Southampton **Tutor**, COMP6234 (Data Visualisation).
- 2016–2017  
St Andrews **Demonstrator**, CS1002 (Object-Oriented Programming).
- Demonstrator**, CS2001 (Foundations of Computation).
- Demonstrator**, CS2003 (The Internet and the Web: Concepts and Programming).
- 2015–2016  
St Andrews **Tutor**, CS1002 (Object-Oriented Programming).
- Tutor**, CS1006 (Programming Projects).
- Demonstrator**, CS1002 (Object-Oriented Programming).
- Demonstrator**, CS2001 (Foundations of Computation).
- Demonstrator**, CS2003 (The Internet and the Web: Concepts and Programming).
- 2014–2015  
St Andrews **Tutor**, CS1006 (Programming Projects).
- Demonstrator**, CS1002 (Object-Oriented Programming).
- Demonstrator**, CS1003 (Programming with Data).
- Demonstrator**, CS1006 (Programming Projects).
- Demonstrator**, CS2003 (The Internet and the Web: Concepts and Programming).